Remarks

This application has been reviewed in light of the Office Action dated January 24, 2007.

Claims 1 - 22 are pending in this application. Claims 1-4, 8-12, 14-20, and 22 have been

amended to define still more clearly what Applicants regard as their invention. Claims 1, 18 and

20 are in independent form. Favorable reconsideration is respectfully requested.

The specification has been amended to attribute the trademarks used in the current

application to the trademark owners. Applicants respectfully request the objection be withdrawn.

A clearer copy of the drawings has been filed to better visualize Applicants' claimed

invention. No new matter has been added.

Claims 1, 3-4, 7-12 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by

Maudlin, U.S Patent Application Publication No. 2004/0075697 (Maudlin). Applicants

respectfully traverse this rejection.

To support a rejection under § 102(e), the cited art reference must disclose each element

of the rejected claim in the manner recited by the claim. Here, rejection under § 102(e) cannot be

supported because Maudlin does not teach each element of Applicants' invention as recited by

the claims. Applicants submit that the claims are patentably distinct from the cited art for at least

the following reasons.

Applicants' invention describes a computer-implemented method for selecting an

obscured object in a three-dimensional computer-generated model. This method comprises

displaying the three-dimensional computer-generated model on a computer screen, wherein the three-dimensional computer-generated model consists of a plurality of objects used to construct a part; a first set of the plurality of objects when displayed obscures a second set of the plurality of objects; the first set of the plurality of objects comprises at least one face; and the second set of the plurality of objects comprises at least one face; receiving first input data interpreted as an instruction to change a visibility characteristic of a first one of the first set of the plurality of objects, the first one of the first set identified upon receiving the first input data and by determining that the first one of the first set shares a same location on the computer screen as a cursor; automatically modifying the visibility characteristic of the first one of the first set to cause a first one of the second set of the plurality of objects to be discernable; receiving second input data interpreted as an instruction to select the first one of the second set of the plurality of objects, the first one of the second set identified upon receiving the second input data and by determining that the first one of the second set shares the same location on the computer screen as the cursor; and designating the first one of the second set of the plurality of objects as a first selected object.

The Examiner cites Maudlin as allegedly teaching a computer-implemented method for displaying and manipulating a three-dimensional model in which display objects can obstruct the view of other display objects, and a cursor can be used to select objects to change their visibility characteristics.

Maudlin discloses selecting portions of a model, which causes an indicator box 142 to appear centrally located on the selected portion to indicate that the portion has been selected. *See* ¶0065 of Maudlin. Once the user has selected the portion of the model to be hidden, the user then selects a hide button which is located on the tool bar. Selecting this hide button causes the selected portion of the model view to be hidden from the user's view. *See* Fig. 15 and ¶0065 of Maudlin. The portion of the model which was hidden from view can be "unhidden" by selecting a show button located on the toolbar. Selecting the show button will cause the selected portion of the model which was previously hidden to reappear in the model window. *See* ¶ 0065 of Maudlin. Maudlin also describes showing "before and after" views of proposed renovations or additions by using the hide and show functionality of the client interface application. By disclosing such views and by requiring a show button, Maudlin describes altering the view of a section of the three-dimensional model of an architectural structure.

However, Maudlin does not teach or suggest every element of Applicants' claimed invention. Maudlin does not teach or suggest, for example, as recited by claim 1, <u>automatically modifying the visibility characteristic</u> of the first one of the first set to cause a first one of the second set of the plurality of objects to be discernable. Maudlin requires selecting a hide button and a show button to hide and show sections of the model. Maudlin does not teach or suggest, for example, a first set of the plurality of objects when displayed obscures a second set of the plurality of objects, the first set of the plurality of objects comprises at least <u>one face;</u> and the second set of the plurality of objects comprises at least <u>one face</u>. Further, Maudlin does not teach

or suggest, for example, as recited by claim 20, a computer that automatically suppresses display

of a first one of the plurality of entities positioned beneath the cursor when the first input data

was received while continuing to display other ones of the entities. Nor does Maudlin teach or

suggest a three-dimensional model comprised of a plurality of entities where each one of the

plurality of entities is one of a vertex, an edge, a face, and a surface. Thus, Applicants maintain

that Maudlin fails to teach each and every element of the claimed invention. Applicants

respectfully request the rejections withdrawn and the claims allowed.

Claim 2 is rejected for allegedly being anticipated by Gordon, U.S. Patent No. 7,043,701

(Gordon). Applicants respectfully traverse this rejection.

Gordon describes a method of displaying information within a three-dimensional

workspace on a computer display including the partitioning of the workspace into a plurality of

layers, where each layer corresponds to a display depth relative to a user. *See* col. 1, lines 53-57.

The Examiner cites to col. 5, last paragraph to argue that "[o]ne having ordinary skill in the art

will know that reducing the opacity of an object is the same as making an object transparent."

However, Gordon in col. 5, last paragraph, merely describes a way to enhance the user's

perception of display depth and provide workspace organization by reducing the opacity level of

an object. *See* col. 5, lines 46-54. The cited paragraph does not teach or suggest automatically

modifying the visibility characteristic of the first one of the first set to cause a first one of the

second set of the plurality of objects to be discernable. Additionally, the cited paragraph does not

teach or suggest receiving second input data interpreted as an instruction to select the first one of

the second set of the plurality of objects, the first one of the second set identified upon receiving the second input data and by determining that the first one of the second set shares the same location on the computer screen as the cursor. Moreover, since claim 2 depends on independent claim 1, as amended, which Applicants believe patentable for the reasons discussed above, Applicants submit, therefore, that claim 2 is also patentable for at least the same reasons.

Claims 5-6, 13-14 and 16-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Maudlin in view of Arnold, U.S. Patent No. 6,812,940 (Arnold). Applicants respectfully traverse the rejection.

Applicants' invention describes an unexpected result and addresses a need in the field such as allowing engineers to quickly select obscured entities in a manner in which engineers commonly select entities, and thereby enhances the capabilities and ease of use of a three-dimensional CAD system. *See* ¶0012 of the Publication. In addition, conventional methods in the art that allow for pointing to a CAD entity such as a vertex, an edge, a face, and a surface, and pressing a mouse button in the way that CAD entities are customarily selected are not available for selecting obscured CAD entities.

Arnold describes a means for inputting data for use with a portable radiotelephone. *See* col. 1, lines 53-55. Arnold further describes the advantage of the invention, namely, to allow easy entry of alphanumeric data into a portable radioteleophone without requiring a large keyboard. *See* col. 12, lines 9-11. Moreover, the invention relates to allowing full or partial control of a portable radiotelephone. *See* col. 2, lines 39-41.

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The Examiner argues that Maudlin teaches "that when an object is selected, an indicator

box appears on the object to indicate that the item is selected." However, the Examiner

acknowledges that Maudlin "does not teach other methods of highlighting selected items such s

displaying a border or changing the color of the selected items" but argues that highlighting was

well known in the art at the time the invention was made. Additionally, the Examiner argues that

Arnold teaches displaying a border around a selected object to highlight it to the user. Thus, the

Examiner concludes that "[i]t would have been obvious to one of ordinary skill in the art at the

time the invention was made to highlight a selected item with a border in order to indicate that it

is selected."

Applicants' invention does not disclose using an indicator box to indicate that a CAD

entity is selected. Moreover, Arnold, alone or in combination with Maudlin, does not teach or

suggest, for example, displaying the three-dimensional computer-generated model on a computer

screen, where the three-dimensional computer-generated model consists of a plurality of objects,

and the first set of the plurality of objects comprises at least one face and the second set of the

plurality of objects comprises at least one face, receiving first input data interpreted as an

instruction to change a visibility characteristic of a first one of the first set of the plurality of

objects, the first one of the first set identified upon receiving the first input data and by

determining that the first one of the first set shares a same location on the computer screen as a

cursor. Moreover, Arnold alone or in combination with Maudlin, does not teach or suggest, for

example, automatically modifying the visibility characteristic of the first one of the first set to

cause a first one of the second set of the plurality of objects to be discernable. Additionally,

Arnold alone or in combination with Maudlin, does not teach or suggest receiving second input

data interpreted as an instruction to select the first one of the second set of the plurality of

objects, the first one of the second set identified upon receiving the second input data and by

determining that the first one of the second set shares the same location on the computer screen

as the cursor.

Claim 15 is rejected under 35 U.S.C. §103(a) as being unpatentable over Gordon in view

of Arnold. Applicants respectfully traverse this rejection.

The Examiner acknowledges that Gordon does not teach highlighting selected objects.

However, as described above and explained further here, Gordon does not teach or suggest

automatically modifying the visibility characteristic of the second one of the first set of the

plurality of objects causing the second one of the first set to become transparent and discernable.

In contrast, Gordon merely describes reducing the opacity level of the selected container object.

See col. 1, lines 61-66.

Schell describes a three-dimensional design and modeling environment which allows user

to draw outlines or perimeters of objects in two-dimensional form. *See* Abstract. Schell does not

teach or suggest, alone or in combination, receiving first input data interpreted as an instruction

to change a visibility characteristic of a first one of the first set of the plurality of objects, the first

one of the first set identified upon receiving the first input data and by determining that the first

one of the first set shares a same location on the computer screen as a cursor. Moreover, Schell,

alone or in combination, does not teach or suggest, for example, <u>automatically</u> modifying the visibility characteristic of the first one of the first set to cause a first one of the second set of the plurality of objects to be discernable. Schell merely describes defining outlines of objects in a two-dimensional manner and using editing tools to push and pull the outline to model a three-dimensional volume and geometry.

Claims 18 and 20 are system and apparatus claims corresponding to method Claim 1 and also are believed clearly patentable over the art cited for substantially the same reasons as those presented above with respect to Claim 1.

A review of the art of record has failed to reveal anything that, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as applied against the independent claims herein. Therefore, those claims are respectfully submitted to be patentable over the art of record. It is respectfully requested that the Examiner withdraw the claim rejections and allow the claims.

The other rejected claims in this application depend from one or another of independent Claims 1, 18 and 20, discussed above and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual consideration or reconsideration, as the case may be, of the patentability of each claim on its own merits is respectfully requested.

Conclusion

Claims 1-4, 8-12, 14-20, and 22 have been amended to more clearly describe Applicants'

invention. Claims 1-22 are now pending and believed to be in condition for allowance.

Applicant respectfully requests that all pending claims be allowed.

Please apply any credits or excess charges to our deposit account number 50-0521.

Respectfully submitted,

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Response to Office Action dated January 24, 2007
U.S. Application No. 10/806,571
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Amendments to the Drawings

Please replace Figs. 1, 2 , 3, 4A – 4D, 5, 6 with the drawings as set forth in the

Replacement Sheets. No new matter has been added.